

Application No.: 10/809,896

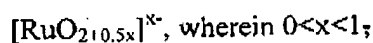
RECEIVED
CENTRAL EXAM CENTER

JAN 02 2009

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Currently amended) A colloidal ruthenic acid compound containing a ruthenic acid nanosheet, said ruthenic acid nanosheet having a thickness of not more than 1 nm, represented by the formula (1):



~~wherein said ruthenic acid nanosheet is in the form of separated particles.~~

2. (Cancelled)

3. (Currently amended) A layered ruthenic acid intercalation compound comprising a layered structure of the ruthenic acid nanosheets, each having a thickness of not more than 1 nm, represented by the formula (1): $[\text{RuO}_{2+0.5x}]^x$, ~~wherein~~ $0 < x < 1$, ~~in accordance with claim 1 and~~ alkylammonium,

said layered ruthenic acid compound having an X-ray diffraction peak intensity at a (00L) plane ($L = 1$ to n when $0 \leq \theta(\text{CuK}\alpha) \leq 90^\circ$, n is determined depending on a basal interplanar spacing and $5 \leq n \leq 35$).

4-5. (Cancelled)

6. (Original) An electrochemical device having an electrode comprising the ruthenic acid nanosheet in accordance with claim 1.

7. (Currently amended) A method of producing a ruthenic acid nanosheet comprising the steps of:

Application No.: 10/809,896

(a) mixing ruthenium oxide and an alkali metal compound and sintering or melting the resulting mixture to obtain a layered alkali metal-ruthenate compound containing a ruthenic acid nanosheet having a thickness of not more than 1 nm;

(b) treating said layered alkali metal-ruthenate compound in an acidic solution to exchange at least part of alkali metal with proton to obtain a protonic layered ruthenic acid hydrate;

(c) reacting said protonic layered ruthenic acid hydrate with alkylammonium or alkylamine to obtain a layered alkylammonium-ruthenic acid intercalation compound; and

(d) mixing said layered alkylammonium-ruthenic acid intercalation compound with a solvent to obtain a colloid containing a ruthenic acid nanosheet having a thickness of not more than 1 nm ~~in the form of separated particles.~~

8. (Original) A method of producing the ruthenic acid nanosheet in accordance with claim 7, wherein ruthenium oxide and alkali metal salt are mixed and the resulting mixture is sintered at 700-900 °C in the step (a).

9. (Original) A method of producing the ruthenic acid nanosheet in accordance with claim 7, wherein ruthenium oxide and alkali metal hydroxide are mixed and the resulting mixture is melted at 500-700 °C in the step (a).

10. (Original) A method of producing the ruthenic acid nanosheet in accordance with claim 7, wherein said protonic layered ruthenic acid hydrate is reacted with alkylammonium represented by $(R)_mNiL_{4-m}$ or $(R)_{m-p}(R')_pNH_{4-m}$ (where R and R' are $CH_3(CH_2)_q$, respectively, $m = 0$ to 4, $p = 0$ to 3 and $q = 0$ to 18) in the step (c).

Application No.: 10/809,896

11. (Original) A method of producing the ruthenic acid nanosheet in accordance with claim 7, wherein said protonic layered ruthenic acid hydrate is reacted with alkylamine represented by $(R)_mNH_{3-m}$ or $(R)_{m-p}(R')_pNH_{3-m}$ (where R and R' are $CH_3(CH_2)_q$, respectively, $m = 0$ to 3, $p = 0$ to 2 and $q = 0$ to 18) in the step (c).

12. (Original) A method of producing the ruthenic acid nanosheet in accordance with claim 7, wherein said layered alkylammonium-ruthenic acid intercalation compound is mixed with at least one solvent selected from the group consisting of water, alcohol, acetonitrile, dimethyl sulfoxide, dimethylformamide and propylene carbonate to obtain a colloid in the step (d).

13. (Cancelled)